# DANGER—400,000 VOLTS!

ELECTRICAL power of 400 k.v. is an awe-inspiring figure, but it was at this voltage that some of the Air Blast circuit breakers at the Nelson Research Laboratories, Stafford, were tested in November.

Over two hundred engineers and officials present at the demonstration were able to see a complete series of tests taking place in the laboratories while sitting in comfort and safety in the demonstration room, for the Marconi Television Demonstration Section, using fixed and mobile cameras, televised the whole of the day's activities. The T.D.S. had had no rehearsals and were working without a shooting script but despite this the perfect continuity and impeccable skill with which this long programme was handled won the admiration of all present.

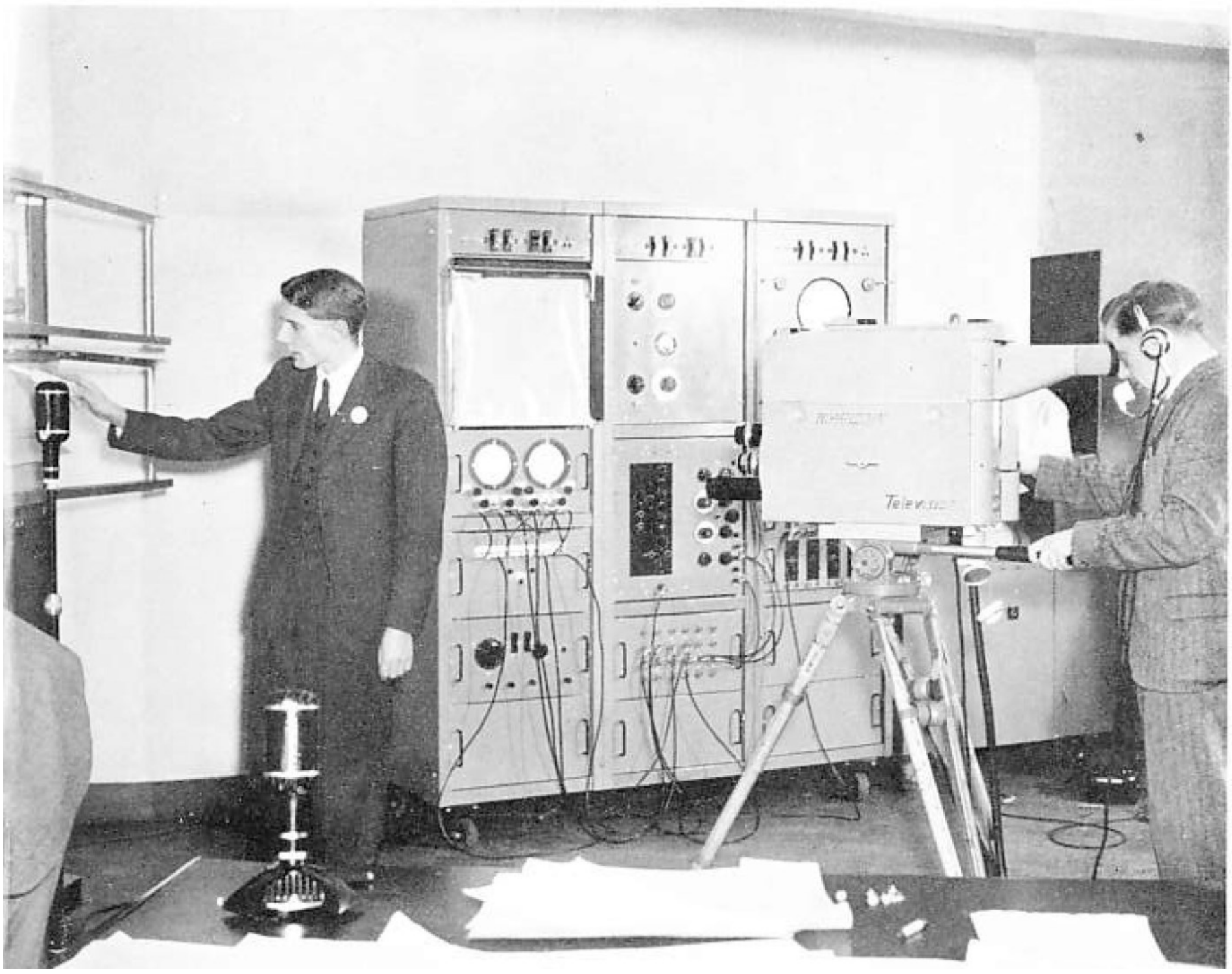
Testing high power circuit breakers was the main feature of the demonstration. High voltages short circuited by the breakers created arcs which were immediately extinguished by powerful Air Blast.

Power was raised by a generator in a special building. It is too dangerous for anyone to enter this building during tests because the sudden surges of electrical energy create magnetic fields of immense power. By securely lashing a Marconi camera within three feet of the generator, the viewers were able to see, for the first time, what happens in the power house during tests.

Television enabled the audience to see the complete cycle of events during each test.

The circuit breakers outside the laboratories, the generator in its special

*The Marconi television camera in use in an improvised studio in the control room of the switchgear testing station*



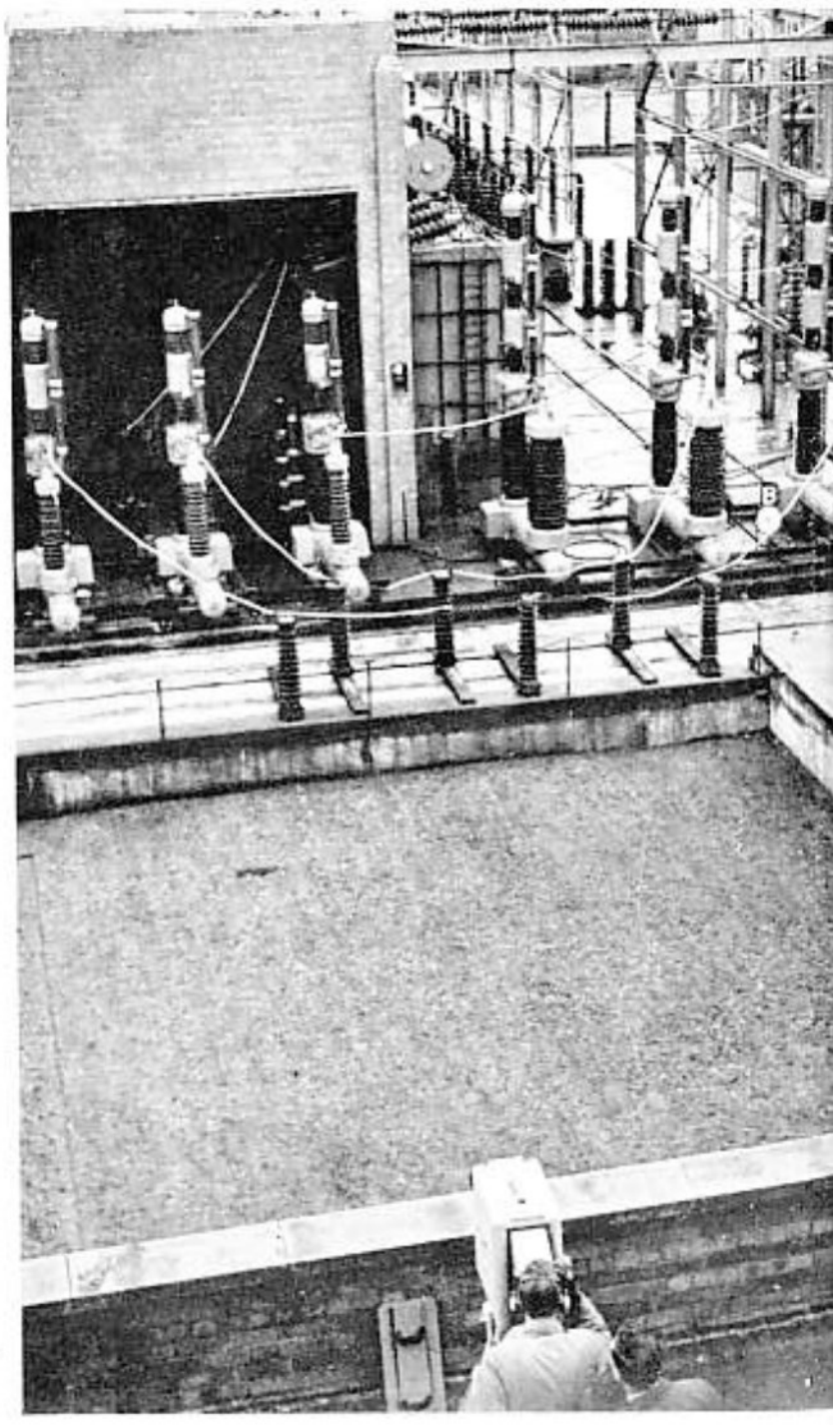
*Removing the contacts after the test on the 275 k.v. circuit breaker*

building, the meters within the laboratory control room registering the rise of power, and the commentator seated at a desk in the improvised but highly efficient studio, were all brought in swift and logical sequence to the television screen in the demonstration room, and the great value of television in these circumstances can be readily appreciated when it is realised that one of these tests took approximately 15 seconds.

Through the windows of the crowded demonstration room we saw the row of red lights across the test area blinking to signify that the area was dangerous; over the television receiver loud speaker we heard the voice telling us what was happening. The picture faded slowly, mixing into a close-up of the meter registering the power.

The voice said, "Ready for test . . . *Now*!" The picture changed to the roof camera in time to catch the arc and Air Blast explosion of the breaker outside; another quick fade to the retreating needle on the meter as the power dissipated, with another split-second fade to the breaker as the contact arm recovered and crashed back into its position.

This co-operative effort of the Nelson Research Laboratories and the Marconi Television Demonstration Section proved conclusively that television has a great future in industry, particularly where dangerous processes are concerned. They have once again led the way and are entitled to feel very proud of their achievements.



*A Marconi television camera mounted on the roof of the Nelson Research Laboratories, Stafford. The camera obtained close-up views of high voltage Air Blast circuit breakers in action*